

Review of Chapter 1

1.1 Simplifying Expressions

PEMDAS

1.2 Properties of Real Numbers

Commutative, Associative, Identity, Inverse, Distributive

Number sets

Additive and Multiplicative inverses

1.3 More Properties

Reflexive, Symmetric, Transitive,
Substitution, +, -, multiplication, division

Solving equations

Word Problems

1.4 Absolute value

Check
True-All Reals
False-No solution

1.5 Inequalities

Interval Notation
Set Builder Notation

$$\{x \mid x > 5\}$$

$$(5, +\infty)$$

1.6 Compound Inequalities
And/OrCompound Absolute Value and ~~Double Absolute value~~Inequality Word
At most
At least
In between

Compound Abs. Value

$$1 \leq |x-3| \leq 4$$

$$|x-3| \geq 1 \quad \text{AND} \quad |x-3| \leq 4$$

$$x-3 \geq 1 \text{ OR } x-3 \leq -1 \quad x-3 \leq 4 \text{ AND } x-3 \geq -4$$

$$x \geq 4 \quad x \leq 2 \quad x \leq 7 \quad x \geq -1$$

Review

p.48-50 #s 11-17odd, 18-23, 25-33odd, 35-37, 40-50even
p.51 13-18, 31, 32

ex compound abs. value

$$4 \leq |8-2y| < 10$$

**Exercises** Find the value of each expression. See Example 1 on page 6.

11. $10 + 16 \div 4 + 8$ 12. $[21 - (9 - 2)] \div 2$ 13. $\frac{14(8-15)}{2}$

Evaluate each expression if $a = 12$, $b = 0.5$, $c = -3$, and $d = \frac{1}{3}$.
See Examples 2 and 3 on page 7.

14. $6b - 5c$ 15. $c^3 + ad$ 16. $\frac{9c + ab}{c}$ 17. $a[b^2(b + a)]$

Exercises Name the sets of numbers to which each value belongs.

See Example 1 on page 12.

18. $-\sqrt{9}$ 19. $1.\overline{6}$ 20. $\frac{35}{7}$ 21. $\sqrt{18}$

Simplify each expression. See Example 5 on page 14.

22. $2m + 7n - 6m - 5n$ 23. $-5(a - 4b) + 4b$ 24. $2(5x + 4y) - 3(x + 8y)$

Exercises Solve each equation. Check your solution.

See Examples 3 and 4 on pages 21 and 22.

25. $x - 6 = -20$ 26. $-\frac{2}{3}a = 14$ 27. $7 + 5n = -58$
28. $3w + 14 = 7w + 2$ 29. $5y + 4 = 2(y - 4)$ 30. $\frac{n}{4} + \frac{n}{3} = \frac{1}{2}$

Solve each equation or formula for the specified variable. See Example 5 on page 22.

31. $Ax + By = C$ for x 32. $\frac{a - 4b^2}{2c} = d$ for a 33. $A = p + prt$ for p

Exercises Solve each equation. Check your solutions.

See Examples 1-4 on pages 28-30.

34. $|x + 11| = 42$ 35. $3|x + 6| = 36$ 36. $|4x - 5| = -25$
37. $|x + 7| = 3x - 5$ 38. $|y - 5| - 2 = 10$ 39. $4|3x + 4| = 4x + 8$

Exercises Solve each inequality. Describe the solution set using set builder or interval notation. Then graph the solution set on a number line.

See Examples 1-3 on pages 34-35.

40. $-7w > 28$ 41. $3x + 4 \geq 19$ 42. $\frac{n}{12} + 5 \leq 7$
43. $3(6 - 5a) < 12a - 36$ 44. $2 - 3z \geq 7(8 - 2z) + 12$ 45. $8(2x - 1) > 11x - 17$

Exercises Solve each inequality. Graph the solution set on a number line.

See Examples 1-5 on pages 40-42.

46. $-1 < 3a + 2 < 14$ 47. $-1 < 3(y - 2) \leq 9$ 48. $|x| + 1 > 12$
49. $|2y - 9| \leq 27$ 50. $|5n - 8| > -4$ 51. $|3b + 11| > 1$

Name the property illustrated by each equation or statement.

13. $(7 \cdot s) \cdot t = 7 \cdot (s \cdot t)$

15. $\left(3 \cdot \frac{1}{3}\right) \cdot 7 = \left(3 \cdot \frac{1}{3}\right) \cdot 7$

17. $(4 + x) + y = y + (4 + x)$

14. If $(r + s)t = rt + st$, then $rt + st = (r + s)t$.

16. $(6 - 2)a - 3b = 4a - 3b$

18. If $5(3) + 7 = 15 + 7$ and $15 + 7 = 22$,
then $5(3) + 7 = 22$.

For Exercises 31 and 32, define a variable, write an equation or inequality, and solve the problem.

31. **CAR RENTAL** Mrs. Denney is renting a car that gets 35 miles per gallon. The rental charge is \$19.50 a day plus 18¢ per mile. Her company will reimburse her for \$33 of this portion of her travel expenses. If Mrs. Denney rents the car for 1 day, find the maximum number of miles that will be paid for by her company.

32. **SCHOOL** To receive a B in his English class, Nick must have an average score of at least 80 on five tests. He scored 87, 89, 76, and 77 on his first four tests. What must he score on the last test to receive a B in the class?